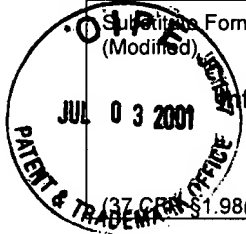


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Substitute Form PTO-1449
(Modified)

U.S. Department of Commerce
Patent and Trademark Office

Attorney's Docket No.
06816/019002

Application No.
09/120,856

**Information Disclosure Statement
by Applicant**

(Use several sheets if necessary)

Applicant
Eric R. Fossum, *et al.*

Filing Date
July 21, 1998

Group Art Unit
2612

U.S. Patent Documents

Examiner Initial	Desig. ID	Patent Number	Issue Date	Patentee	Class	Subclass	Filing Date If Appropriate
	AA						
	AB						
	AC						
	AD						
	AE						
	AF						
	AG						
	AH						
	AI						
	AJ						
	AK						

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Foreign Patent Documents or Published Foreign Patent Applications

Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation	
							Yes	No
	AL							
	AM							
	AN							
	AO							
	AP							

Other Documents (include Author, Title, Date, and Place of Publication)

Examiner Initial	Desig. ID	Document
W	AQ	Fossum et al., "Future Prospects for CMOS Active Pixel Image Sensors," 1995 IEEE Workshop on CCDs and Advanced Image Sensors, 4 pages, (1995)
	AR	
	AS	
	AT	

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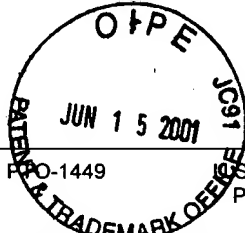
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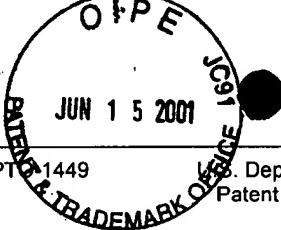
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Substitute Form PTO-1449 (Modified) Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))	U.S. Department of Commerce Patent and Trademark Office	Attorney's Docket No. 06816/019002	Application No. 09/120,856
	Applicant Eric R. Fossum <i>et al.</i>		
	Filing Date July 21, 1998		Group Art Unit 2612

U.S. Patent Documents							
Examiner Initial	Desig. ID	Patent Number	Issue Date	Patentee	Class	Subclass	Filing Date If Appropriate
JL	AA	4,859,624	Aug. 22, 1989	Goto	1	1	
	AB	5,184,203	Feb. 2, 1993	Taguchi	1	1	
	AC	5,262,871	Nov. 16, 1993	Wilder et al.	1	1	
	AD	5,225,696	Jul. 6, 1993	Bahraman	1	1	
	AE	5,134,488	Jul. 28, 1992	Sauer	1	1	
	AF	4,631,400	Dec. 23, 1986	Tanner et al.	1	1	
	AG	5,097,339	Mar. 17, 1992	Ishida et al.	1	1	
	AH	4,942,474	Jul. 17, 1990	Akimoto et al.	1	1	
	AI	4,660,090	Apr. 21, 1987	Hynecek	1	1	
	AJ	4,839,729	Jun. 13, 1989	Ando et al.	1	1	
	AK	5,614,744	Mar. 25, 1997	Merrill	1	1	
	AL	5,625,210	Apr. 29, 1997	Lee et al.	1	1	
	AM	4,155,094	May 15, 1979	Ohba et al.	1	1	
	AN	5,198,880	Mar. 30, 1993	Taguchi et al.	1	1	
	AO	4,959,727	Sep. 25, 1990	Imaide et al.	1	1	
	AP	4,835,617	May 30, 1989	Todaka et al.	1	1	
	AQ	4,839,735	Jun. 13, 1989	Kyomasu et al.	1	1	
	AR	5,420,634	May 30, 1995	Matsumoto	1	1	
	AS	5,317,174	May 31, 1994	Hynecek	1	1	
	AT	5,182,623	Jan. 26, 1993	Hynecek	1	1	
JL	AU	5,335,015	Aug. 2, 1994	Cooper et al.	1	1	
	AV	5,341,008	Aug. 23, 1994	Hynecek	1	1	
	AW	5,369,039	Nov. 29, 1994	Hynecek	1	1	
	AX	5,424,223	Jun. 13, 1995	Hynecek	1	1	
	AY	5,436,476	Jul. 25, 1995	Hynecek	1	1	
	AZ	5,471,245	Nov. 28, 1995	Cooper et al.	1	1	
	AAA	5,500,383	Mar. 19, 1996	Hynecek	1	1	

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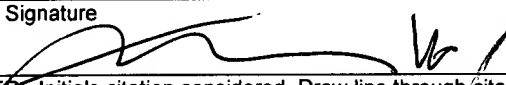


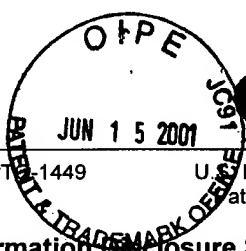
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U.S. Patent Documents							
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<i>M</i>	ABB	5,528,643	Jun. 18, 1996	Hynecek			
	ACC	5,652,622	Jul. 29, 1997	Hynecek			
	ADD	4,363,963	Dec. 14, 1982	Ando			
	AEE	4,525,742	Jun. 25, 1985	Nishizawa et al.			
	AFF	5,587,596	Dec. 24, 1996	Chi et al.			
	AGG	5,608,243	Mar. 4, 1997	Chi et al.			
<i>M</i>	AHH	5,633,679	May 27, 1997	Hosier et al.			

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							Yes	No
	AII							

Other Documents (include Author, Title, Date, and Place of Publication)		
Examiner Initial	Desig. ID	Document
<i>M</i>	AJJ ✓	S. Chamberlain, "Photosensitivity and Scanning of Silicon Image Detector Arrays," IEEE J. Solid State Circuits, Vol. SC-4, No. 6, pp. 333-342 (December 1969)
	AKK ✓	M. Aoki, et al., "2/3 Inch Format MOS Single-Chip Color Imager," IEEE Trans. On Electron Devices, Vol. ED-29, No. 4, pp. 745-750 (April 1982)
	ALL ✓	J. Hynecek, "A New Device Architecture Suitable for High-Resolution and High-Performance Image Sensors," IEEE Trans. on Electron Devices, Vol. 35(5), pp. 646-652 (May 1988)
	AMM ✓	F. Andoh, et al., "A 250,000-Pixel Image Sensor with FET Amplification at Each Pixel for High-Speed Television Cameras," 1990 IEEE International Solid-State Circuits Conference, Digest of Technical Papers, pp. 212-213 (February 16, 1990)
	ANN ✓	N. Tanaka, et al., "A 310K Pixel Bipolar Imager (BASIS)," IEEE Trans. On Electron Devices, Vol. 37(4), pp. 964-971 (April 1990)
	AOO ✓	K. Chen, et al., "PASIC: A Processor-A/D converter-Sensor Integrated Circuit," IEEE ISCAS, pp. 1705-1708 (1990)
	APP ✓	O. Yadid-Pecht, et al., "A Random Access Photodiode Array for Intelligent Image Capture," IEEE Trans. on Electron Devices, Vol. 38, No. 8, pp. 1772-1780 (August 1991)
	AQQ ✓	M. Kyomasu, "A New MOS Imager Using Photodiode as Current Source," IEEE Journal of Solid State Circuits, Vol. 26, No. 8, pp. 1116-1122 (August 1991)
	ARR ✓	R. Forchheimer, et al., "MAPP2200 - A Second generation smart optical sensor," Proc. SPIE, Vol. 1659, pp. 2-11 (1992)
<i>M</i>	ASS ✓	C. Jansson, et al., "An Addressable 256 x 256 Photodiode Image Sensor Array with an 8-Bit Digital Output," Analog Integrated Circuits and Signal Processing, Vol. 4, pp. 37-49, (1993)

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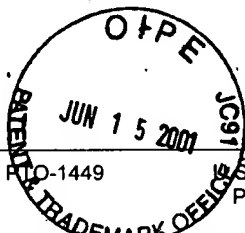
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Other Documents (include Author, Title, Date, and Place of Publication)		
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	ATT ✓	H. Kawashima, et al., "A 1/4 Inch Format 250K Pixel Amplified MOS Image Sensor Using CMOS Process," IEEE IEDM Tech. Digest, pp. 22.4.1-22.4.4 (1993)
	AUU ✓	S. Mendis, et al., "Design of a Low-Light-Level Image Sensor with On-chip Sigma-Delta Analog-to-Digital Conversion," SPIE, Charge Coupled Devices & Solid State Optical Sensors III, Vol. 1900, pp. 31-39 (1993)
	AVV ✓	M. Sugawara, et al., "An Amplified MOS Imager Suited for Image Processing," 1994 IEEE International Solid-State Circuits Conference, Digest of Technical Papers, Session 13, Neural Networks and Image Sensors/ Paper TP 13.6, pp. 228-229 (1994)
	AWW ✓	B. Fowler, et al., "A CMOS Area Image Sensors with Pixel-Level A/D Conversion," 1994 IEEE International Solid-State Circuits Conference, Digest of Technical Papers, Neural Networks and Image Sensors/ Paper TP 13.5, pp. 226-227 (1994)
	AXX ✓	B. Pain, et al., "Approaches and analysis for on-focal-plane analog-to-digital conversion," Proc. SPIE, Vol. 2226, pp. 208-218 (1994)
	AYY ✓	S. Mendis, "CMOS Active Pixel Image Sensors with On-Chip Analog-to-Digital Conversion," UMI Dissertation Services, UMI Number 9533615, Columbia University (1995)
	AZZ ✓	E. Eid, et al., "A 256 x 256 CMOS Active Pixel Image Sensor," Charge-Coupled Devices and Solid State Optical Sensors, SPIE, Vol. 2415, pp. 265-275 (1995)
	AAAA ✓	A. Dickinson, et al., "Standard CMOS Active Pixel Image Sensors for Multimedia Applications," Proc. 16 th Conference on Advanced Research in VLSI, Chapel Hill, NC, USA, IEEE, pp. 214-224 (Mar. 27-29, 1995)
	ABBB ✓	E. Fossum, "CMOS Image Sensors: Electronic Camera on a Chip," IED Meeting, Washington, D.C., USA, IEEE, IEDM, pp. 1.3.1-1.3.9 (Dec. 10-13, 1995)
	ACCC ✓	A. Gruss, et al., "Integrated Sensor and Range-Finding Analog Signal Processor," IEEE Journal of Solid State Circuits, Vol. 26, No. 3, pp. 184-191 (March 1991)
	ADDD ✓	Renshaw, et al., "ASIC Image Sensors," Proc. IEEE ISCAS, pp. 3038-3041 (1990)
	AEEE ✓	O. Vellacott, "CMOS in camera," IEE Review, pp. 111-114 (May 1994)
	AFFF ✓	I. Muirhead, "Developments in CMOS Camera Technology," published by: IEE, Savoy Place, London WC2R 0BL, UK, pp. 5/1-5/4 (1994)
	AGGG ✓	I. Takayanagi, et al., "A Multiple Output CMD Imager for Real-Time Image Processing," IEEE, IEDM, pp. 22.5.1-22.5.4 (1993)
	AHHH ✓	M. White, et al., "Characterization of Surface Channel CCD Image Arrays at Low Light Levels," IEEE Journal of Solid-State Circuits, Vol. SC-9, No. 1, pp. 1-13 (February 1974)
	AIII ✓	W. Yang, et al., "A full-fill factor CCD imager with integrated signal processors," IEEE International Solid-State Circuits Conference Digest of Technical Papers, pp. 218-219 and 300 (February 16, 1990)
	AJJJ ✓	R. Forchheimer, "Single-chip image sensors with a digital processor array," Journal of VLSI Signal Processing, Vol. 5, pp. 121-131 (1993)
	AKKK ✓	E. Fossum, et al., "Development of CMOS Active Pixel Image Sensors for Low Cost Commercial Applications," Conference Proceedings of NASA Technology 2004, pp. 1-2 (November 1994)
	ALLL ✓	E. Fossum, et al., "Application of the active pixel sensor concept to guidance and navigation," SPIE, Vol. 1949, Space Guidance, Control and Tracking, paper 30, pp. 1-8 (1993)

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		Applicant Eric R. Fossum <i>et al.</i>	
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(37 CFR §1.98(b))

Other Documents (include Author, Title, Date, and Place of Publication)

Examiner Initial	Desig. ID	Document
	AMMM	✓ E. Fossum, "Assessment of Image Sensor Technology for Future NASA Missions," Proceedings of the SPIE, Vol. 2172, Charge-Coupled Devices and Solid-State Optical Sensors IV, pp. 1-16 (1994)
	ANNN	✓ T. Kuriyama, et al., "A 1/3-in 270 000 Pixel CCD Image Sensor," IEEE Transaction on Electron Devices, Special Issue on Solid State Image Sensors," Vol. 38, No. 5, pp. 949-953 (May 1991)
	AOOO	✓ J. Hojo, et al., "A 1/3-in 510(H) x 492(V) CCD Image Sensor with Mirror Image Function," IEEE Transaction on Electron Devices, Special Issue on Solid State Image Sensors," Vol. 38, No. 5, pp. 954-959 (May 1991)
	APPP	✓ H. Ando, et al., "A 1/2-in CCD Imager with Lateral Overflow-Gate Shutter," IEEE Transaction on Electron Devices, Special Issue on Solid State Image Sensors," Vol. 38, No. 5, pp. 960-964 (May 1991)
	AQQQ	✓ A. Toyoda, et al., "A Novel Tungsten Light-Shield Structure for High-Density CCD Image Sensors," IEEE Transaction on Electron Devices, Special Issue on Solid State Image Sensors," Vol. 38, No. 5, pp. 965-968 (May 1991)
	ARRR	✓ T. Ozaki, et al., "A Low-Noise Line-Amplified MOS Imaging Devices," IEEE Transaction on Electron Devices, Special Issue on Solid State Image Sensors," Vol. 38, No. 5, pp. 969-975 (May 1991)
	ASSS	✓ M. Yamagishi, et al., "A 2 Million Pixel FIT-CCD Image Sensor for HDTV Camera Systems," IEEE Transaction on Electron Devices, Special Issue on Solid State Image Sensors," Vol. 38, No. 5, pp. 976-980 (May 1991)
	ATTT	✓ E. Stevens, et al., "A 1-Megapixel, Progressive-Scan Image Sensor with Antiblooming Control and Lag-Free Operation," IEEE Transaction on Electron Devices, Special Issue on Solid State Image Sensors," Vol. 38, No. 5, pp. 981-988 (May 1991)
	AUUU	✓ K. Matsumoto, et al., "The Operation Mechanism of a Charge Modulation Device (CMD) Image Sensor," IEEE Transaction on Electron Devices, Special Issue on Solid State Image Sensors," Vol. 38, No. 5, pp. 989-998 (May 1991)
	AVVV	✓ K. Matsumoto, et al., "Analysis of Operational Speed and Scaling Down the Pixel Size of a Charge Modulation Device (CMD) Image Sensor," IEEE Transaction on Electron Devices, Special Issue on Solid State Image Sensors," Vol. 38, No. 5, pp. 999-1004 (May 1991)
	AWWW	✓ M. Ogata, "A Small Pixel CMD Image Sensor," IEEE Transaction on Electron Devices, Special Issue on Solid State Image Sensors," Vol. 38, No. 5, pp. 1005-1010 (May 1991)
	AXXX	✓ Hynecek, "BCMD - An Improved Photosite Structure for High-Density Image Sensors," IEEE Transactions on Electron Devices, Vol., 38(5), pp. 1011-1020 (May 1991)
	AYYY	✓ T. Mizoguchi, et al., "A 250 k-Pixel SIT Image Sensor Operating in its High-Sensitivity Mode," IEEE Transaction on Electron Devices, Special Issue on Solid State Image Sensors," Vol. 38, No. 5, pp. 1021-1027 (May 1991)
	AZZZ	✓ Y. Nakamura, et al., "Design of Bipolar Imaging Device (BASIS)," IEEE Transaction on Electron Devices, Special Issue on Solid State Image Sensors," Vol. 38, No. 5, pp. 1028-1036 (May 1991)
	AAAAA	✓ M. Miyawaki, et al., "Reduction of Fixed-Pattern Noise of BASIS Due to Low Kinetic Energy Reactive Ion to Low Kinetic Energy Reactive Ion and Native-Oxide-Free Processing," IEEE Transaction on Electron Devices, Special Issue on Solid State Image Sensors," Vol. 38, No. 5, pp. 1037-1043 (May 1991)
	ABBBB	✓ Y. Matsunaga, et al., "A High-Sensitivity MOS Photo-Transistor for Area Image Sensor," IEEE Transaction on Electron Devices, Special Issue on Solid State Image Sensors," Vol. 38, No. 5, pp. 1044-1047 (May 1991)

Examiner Signature

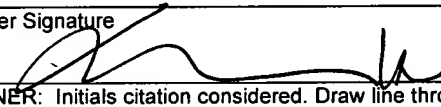
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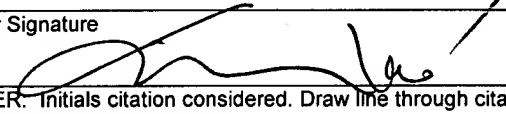
Examiner Initial	Desig. ID	Document
<i>ju</i>	ACCCC ✓	N. Mutoh, et al., "New Low-Noise Output Amplifier for High-Definition CCD Image Sensor," IEEE Transaction on Electron Devices, Special Issue on Solid State Image Sensors," Vol. 38, No. 5, pp. 1048-10551 (May 1991)
	ADDDD ✓	M. Tabei, et al., "A New CCD Architecture of High-Resolution and Sensitivity for Color Digital Still Picture," IEEE Transaction on Electron Devices, Special Issue on Solid State Image Sensors," Vol. 38, No. 5, pp. 1052-1058 (May 1991)
	AEEEE ✓	J. Bosiers, et al., "A 2/3-in 1187(H) x 581(V) S-VHS-Compatible Frame-Transfer CCD for ESP and Movie Mode," IEEE Transaction on Electron Devices, Special Issue on Solid State Image Sensors," Vol. 38, No. 5, pp. 1059-1068 (May 1991)
	AFFFF ✓	B. Burke, "An Abutable CCD Imager for Visible and X-Ray Focal Plane Arrays," IEEE Transaction on Electron Devices, Special Issue on Solid State Image Sensors," Vol. 38, No. 5, pp. 1069-1076 (May 1991)
	AGGGG ✓	E. Garcia, "CCD Arrays for Readout of Electrophotographic Latent Images," IEEE Transaction on Electron Devices, Special Issue on Solid State Image Sensors," Vol. 38, No. 5, pp. 1077-1085 (May 1991)
	AHHHH ✓	T. Kaneko, et al., "400 dpi Integrated Contact Type Linear Image Sensors with Poly-Si TFT's Analog Readout Circuits and Dynamic Shift Registers," IEEE Transaction on Electron Devices, Special Issue on Solid State Image Sensors," Vol. 38, No. 5, pp. 1086-1093 (May 1991)
	AIIII ✓	C. K. Chen, et al., "Ultraviolet, Visible, and Infrared Response of PtSi Schottky-Barrier Detectors Operated in the Front-Illuminated Mode," IEEE Transaction on Electron Devices, Special Issue on Solid State Image Sensors," Vol. 38, No. 5, pp. 1094-1103 (May 1991)
	AJJJJ ✓	R. B. Bailey, et al., "256 x 256 Hybrid HgCdTe Infrared Focal Plane Arrays," IEEE Transaction on Electron Devices, Special Issue on Solid State Image Sensors," Vol. 38, No. 5, pp. 1104-1109 (May 1991)
	AKKKK ✓	H. Zogg, et al., "Infrared Sensor Arrays with 3-12 μ m Cutoff Wavelengths in Heteroepitaxial Narrow-Gap Semiconductor on Silicon Substrates," IEEE Transaction on Electron Devices, Special Issue on Solid State Image Sensors," Vol. 38, No. 5, pp. 1110-1117 (May 1991)
	ALLLL ✓	C. G. Bethea, et al., "10- μ m GaAs / AlGaAs Multiquantum Well Scanned Array Infrared Imaging Camera," IEEE Transaction on Electron Devices, Special Issue on Solid State Image Sensors," Vol. 38, No. 5, pp. 1118-1123 (May 1991)
	AMMMM ✓	L. J. Kozlowski, et al., "LWIR 128 x 128 GaAs / AlGaAs Multiple Quantum Well Hybrid Focal Plane Array," IEEE Transaction on Electron Devices, Special Issue on Solid State Image Sensors," Vol. 38, No. 5, pp. 1124-1130 (May 1991)
	ANNNN ✓	M. Denda, et al., "4-Band x 4096-Element Schottky-Barrier Infrared Linear Image Sensor," IEEE Transaction on Electron Devices, Special Issue on Solid State Image Sensors," Vol. 38, No. 5, pp. 1131-1135 (May 1991)
	AOOOO ✓	S. Tohyama, et al., "A New Concept Silicon Homojunction Infrared Sensor," IEEE Transaction on Electron Devices, Special Issue on Solid State Image Sensors," Vol. 38, No. 5, pp. 1136-1140 (May 1991)
<i>ju</i>	APPPP ✓	T-L Lin, et al., "SiGe / Si Heterojunction Internal Photoemission Long-Wavelength Infrared Detectors Fabricated by Molecular Beam Epitaxy," IEEE Transaction on Electron Devices, Special Issue on Solid State Image Sensors," Vol. 38, No. 5, pp. 1141-1144 (May 1991)

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<i>W</i>	AQQQQ ✓	M. Okuyama, et al., "Room-Temperature-Operated Infrared Image CCD Sensor Using Pyroelectric Gate Coupled by Dielectric Connector," IEEE Transaction on Electron Devices, Special Issue on Solid State Image Sensors," Vol. 38, No. 5, pp. 1145-1151 (May 1991)
<i>f</i>	ARRRR ✓	J.G.C. Bakker, "Simple Analytical Expressions for the Fringing Field and Fringing-Field-Induced Transfer Time in Charge-Coupled Devices," IEEE Transaction on Electron Devices, Special Issue on Solid State Image Sensors," Vol. 38, No. 5, pp. 1152-1161 (May 1991)
	ASSSS ✓	E. K. Banghart, et al., "A Model for Charge Transfer in Buried-Channel Charge-Couple Devices at Low Temperature," IEEE Transaction on Electron Devices, Special Issue on Solid State Image Sensors," Vol. 38, No. 5, pp. 1162-1174 (May 1991)
	ATTTT ✓	C. R. Hoople, et al., "Characteristics of Submicrometer Gaps in Buried-Channel CCD Structures," IEEE Transaction on Electron Devices, Special Issue on Solid State Image Sensors," Vol. 38, No. 5, pp. 1175-1181 (May 1991)
	AUUUU ✓	E.R. Fossum, et al., "Two-Dimensional Electron Gas Charge-Coupled Devices (2DEG-CCD's)," IEEE Transaction on Electron Devices, Special Issue on Solid State Image Sensors," Vol. 38, No. 5, pp. 1182-1192 (May 1991)
	AVVVV ✓	J.G.C. Bakker, et al., "The Tacking CCD: A New CCD Concept," IEEE Transaction on Electron Devices, Special Issue on Solid State Image Sensors," Vol. 38, No. 5, pp. 1193-1200 (May 1991)
	AWWWW ✓	S. Takayama, et al., "A Dynamic Model of an a-Si:H Photoconductive Sensor," IEEE Transaction on Electron Devices, Special Issue on Solid State Image Sensors," Vol. 38, No. 5, pp. 1201-1205 (May 1991)
	AXXXX ✓	P. Centen, "CCD On-Chip Amplifiers: Noise Performance versus MOS Transistor Dimensions," IEEE Transaction on Electron Devices, Special Issue on Solid State Image Sensors," Vol. 38, No. 5, pp. 1206-1216 (May 1991)
	AYYYY ✓	N. Ozawa, et al., "A Correlative Coefficient Multiplying (CCM) Method for Chrominance Moire Reduction in Single-Chip Color Video Cameras," IEEE Transaction on Electron Devices, Special Issue on Solid State Image Sensors," Vol. 38, No. 5, pp. 1217-1225 (May 1991)
	AZZZZ ✓	Y.T. Tsai, "Color Image Compression for Single-Chip Cameras," IEEE Transaction on Electron Devices, Special Issue on Solid State Image Sensors," Vol. 38, No. 5, pp. 1226-1232 (May 1991)
	AAAAAA ✓	P. Noble, "Self-Scanned Silicon Image Detector Arrays," IEEE Trans. on Electron Devices, Vol. ED-15, No. 4, pp. 202-209 (April 1968)
	BBBBBB ✓	J. Nishizawa, et al., "Static Induction Transistor Image Sensors," IEEE Trans. on Electron Devices, Vol. ED-26 (12), pp. 1970-1977 (December 1979)
	ACCCCC ✓	K. Matsumoto, et al., "A New MOS Phototransistor Operating in a Non-Destructive Readout Mode," Jpn. J. Appl. Phys., Vol. 24, No. 5, pp. L323-L325 (1985)
	ADDDDD ✓	H. Ando, et al., "Design Consideration and Performance of a New MOS Imaging Device," IEEE Trans. on Electron Devices, Vol. ED-32, No. 8, pp. 1484-1489 (August 1985)
	AEEEEEE ✓	T. Nakamura, et al., "A New MOS Image Sensor Operating in a Non-Destructive Readout Mode," IEDM Tech. Dig., pp. 353-356 (1986)
	AFFFFFF ✓	A. Yusa, et al., "SIT Image Sensor: Design Considerations and Characteristics" IEEE Trans. on Electron Devices, Vol. ED-33, No. 6, pp. 735-742 (June 1986)
<i>W</i>	AGGGGG ✓	N. Tanaka, et al., "A Novel Bipolar Image Device with Self-Noise-Reduction Capability," IEEE Trans. on Electron Devices, Vol. 36(1), pp. 31-38 (January 1989)

Examiner Signature 	Date Considered 9/6/01
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Substitute Form PTO-1449 (Modified) Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))	U.S. Department of Commerce Patent and Trademark Office	Attorney's Docket No. 06816/019002	Application No. 09/120,856
	Applicant Eric R. Fossum <i>et al.</i>		
	Filing Date July 21, 1998	Group Art Unit 2612	

Other Documents (include Author, Title, Date, and Place of Publication)

Examiner Initial	Desig. ID	Document
<i>le</i>	AHHHHH ✓	Z. Huang, et al., "A Novel Amplified Image Sensor with a-Si:H Photoconductor and MOS Transistor," IEEE Trans. on Electron Devices, Vol. 37, No. 6, pp. 1432-1438 (June 1990)
<i>1</i>	AIHHH ✓	Y. Nakamura, et al., "Design of Bipolar Imaging Devices (BASIS): Analysis of Random Noise," IEEE Trans. on Electron Devices, Vol. 39(6), pp. 1341-1349 (June 1992)
	AJJJJ ✓	E. Fossum, "Active-pixel sensors challenge CCDs," Laser Focus World, Vol. 29, pp. 83-87 (June 1993)
	AKKKKK ✓	S. Mendis, et al., "A 128 x 128 CMOS Active Pixel Image Sensor for Highly Integrated Imaging Systems," Proc. of the 1993 IEEE International Electron Devices Meeting, pp. 583-586 (1993)
	ALLLLL ✓	S. Mendis, et al., "Progress in CMOS Active Pixel Image Sensors," Proc. SPIE, Vol. 2172, pp. 19-29 (1994)
	MMMMM ✓	S. Mendis, et al., "CMOS Active Pixel-Image Sensor," IEEE Trans. on Electron Devices, Vol. 41, No. 3, pp. 452-453 (March 1994)
	ANNNNN ✓	T. Kinugasa, et al., "An Electronic Variable-Shutter System in Video Camera Use," IEEE Transactions on Consumer Electronics, Vol. CE-33, No. 3, pp. 249-255 (1987)
<i>9/6</i>	AOOOOO ✓	S. Mendis, et al., "CMOS Active Pixel Image Sensor," Citation Unknown, pp. 1-7 (July 1993)

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Eric R. Fossum, *et al.*Filing Date
July 21, 1998Group Art Unit
2612**U.S. Patent Documents**

Examiner Initial	Desig. ID	Patent Number	Issue Date	Patentee	Class	Subclass	Filing Date If Appropriate
<i>76</i>	AA	5,345,266	Sep. 6, 1994	Denyer ✓	—	—	
	AB	5,153,421	Oct. 6, 1992	Tandon <i>et al.</i>	—	—	
	AC	5,631,704	May 20, 1997	Dickinson <i>et al.</i>	—	—	
	AD	5,708,263	Jan. 13, 1998	Wong	—	—	
	AE	5,808,676	Sep. 15, 1998	Biegelsen <i>et al.</i>	—	—	
	AF	5,883,830	Mar. 16, 1999	Hirt <i>et al.</i>	—	—	
	AG	5,953,060	Sep. 14, 1999	Dierickx	—	—	
	AH	5,739,562	Apr. 14, 1998	Ackland <i>et al.</i>	—	—	
	AI	5,784,102	Jul. 21, 1998	Hussey <i>et al.</i>	—	—	
	AJ	5,198,654	Mar. 30, 1993	Mukainakano <i>et al.</i>	—	—	
	AK	5,452,109	Sep. 19, 1995	Compton	—	—	
	AL	5,495,337	Feb. 27, 1996	Goshorn <i>et al.</i>	—	—	
	AM	5,572,074	Nov. 5, 1996	Standley	—	—	
	AN	5,576,762	Nov. 19, 1996	Udagawa	—	—	
	AO	5,585,620	Dec. 17, 1996	Nakamura <i>et al.</i>	—	—	
	AP	5,693,932	Dec. 2, 1997	Ueno <i>et al.</i>	—	—	
	AQ	6,014,231	Jan. 11, 2000	Sawase <i>et al.</i>	—	—	
<i>m</i>	AR	5,729,008	Mar. 17, 1998	Blalock <i>et al.</i>	—	—	

Foreign Patent Documents or Published Foreign Patent Applications

Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation	
							Yes	No
<i>a</i>	AS	0 700 582 B1	July 22, 1998	EPO	—	—	X	

Other Documents (include Author, Title, Date, and Place of Publication)

Examiner Initial	Desig. ID	Document
<i>m</i>	AT	Renshaw, D., <i>et al.</i> , "ASIC Vision," Custom Integrated Circuits Conference, IEEE, pages 7.3.1-7.3.4 (May 1990)
<i>m</i>	AU	Anderson, S., <i>et al.</i> , "A Single Chip Sensor & Image Processor for Fingerprint Verification," Custom Integrated Circuits Conference, IEEE, pages 12.1.1-12.1.4 (1991)

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(37 CFR § 1.98(b))

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2612**Other Documents (include Author, Title, Date, and Place of Publication)**

Examiner Initial	Desig. ID	Document
<i>h</i>	AV	Wang, G., et al., "CMOS Video Camera," University of Edinburgh, IEEE, pages 100-132, (March 1991)
<i>g</i>	AW	Denyer, P.B., et al., "CMOS Image Sensors for Multimedia Applications," Custom Integrated Circuits Conference, IEEE, pages 11.5.1-11.5.4 (March 1993)
<i>h</i>	AX	Eric R. Fossum, "Active Pixel Sensors: Are CCD's Dinosaurs?," Proceedings of the SPIE, vol. 1990, Charge-Coupled Devices and Solid-State Optical Sensors III, pages 1-13 (1993)

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